reference to each slave computer 304 and 306, such that each slave computer can retrieve this information. In operation, a slave computer 304 may retrieve the configuration information within slave configuration file 324 and use that information to configure its graphics card accordingly. The details regarding such an initialization process are well known by the persons skilled in the art, and therefore need not be described herein.

In an alternative embodiment (not specifically illustrated) the master computer 302 may perform a similar translation of the configuration information, but rather than save individual slave configuration files 324 and 326, the master computer 302 may instead communicate this configuration information directly to each slave computer. One way of communicating this information to the slave computers is through a communication socket. In such a system, for example, a slave system (after initialization) may instruct the master computer 302 to communicate configuration information to the slave computer 304 through a specified port or socket. The slave computer 304 may thereafter poll that socket or communication port to receive the configuration information. Once received, the slave computer may then configure itself accordingly.

Reference is now made to FIG. 17, which is a diagram illustrating certain principal components of a system constructed in accordance with an alternative embodiment of the present invention. The general operation of the embodiment illustrated in FIG. 17 is similar to that illustrated in FIG. 16, except that it has been expanded to a three-tiered system, as opposed to a two-tiered system. In a system such as that illustrated in FIG. 17, there is a head computer 402, and plurality of master computers 404, 406, 408, and 410, and a plurality of slave computers associated with each master computer. In this regard, the various pluralities of slave computers may be referred to as clusters, where each cluster of slave computers is associated with a single display (not shown). Thus, each master computer 404, 406, 408, and 410 is likewise associated with a single display.

Similar to the operation of the system illustrated in FIG. 16, in operation, the head computer 402 may receive configuration information from a head configuration file 420, which is located in a predetermined location. The head computer 402 may include a code segment or process 422 that performs a translation of the configuration information received from the head configuration file 420. The translation process 422 may be operative to output separate configuration information for each of the plurality of the master computers 404, 406, 408 and 410. As in the embodiment illustrated in FIG. 16, the configuration translation process 422 may output separate and independent master configuration files (e.g., 424), which are associated with each of the master computers. Alternatively, but not specifically illustrated, the translation process 422 may communicate the configuration information to each of the master computers through communication ports or sockets, in a manner such as that discussed above in connection with an alternative embodiment to the system of FIG. 16.

Thereafter, and in a manner similar to that discussed in connection with FIG. 16, each master computer (e.g., 404) may include a code segment or process 426 that translates the configuration information received by that master computer into an appropriate format for further communication to each of the slave computers associated with that master computer. In one embodiment, this translated information may be output to slave configuration files (e.g., 428), or alternatively may be communicated to the various slave computers through communication ports or sockets.

It should be appreciated that, in accordance with the scope and spirit of the present invention, the particular mechanisms for translating this configuration information, and communicating the configuration information to the various master and slave computers may vary. Indeed, what is significant for purposes of the broader concepts and teachings of the present invention is the overall configuration and translation process, which ensures

compatible operation among the various slave computers that are configured to drive individual displays.

Having described the system-level structure and operation of embodiments of the present invention, reference is made briefly to FIG. 18, which illustrates certain hardware components of the system of FIGS. 16 and 17 in more detail. In this regard, FIG. 18 shows a network 450 and n slave computers (only two specifically illustrated). Each slave computer 452 and 456 includes a graphics card 454 and 458, respectively. As is known, the graphics cards 454 and 458 operate to process graphics information and send an analog (or digital -- e.g., DVI, digital video interface) signal to a display.

In a system constructed in accordance with the present invention, the various graphics cards are configured to process and render only a portion of a display screen. The outputs of the respective graphics cards 454 and 458 are sent to a compositor 460, which takes the individual video signals generated by the graphics cards 454 and 458 and generates a single, composite signal that drives a single display 470. As described herein, the present invention relates to the configuration of the various graphics cards 454 and 458 so that that are compatibly configured to generate appropriate video signals to render a single display 470.

Reference is now made to Figs. 19, 20, 21, and 22, which are flow charts that depict the top-level functional operation of the system constructed in accordance with the invention. The flow charts illustrated in these drawings have been genericized, such that they illustrate the operation of both a two-tiered system and a three-tiered system. Referring first to the flow chart 500 of FIG. 19, a top-level flow chart is presented, which illustrates the overall system operation. Briefly, this top-level operation consists of various steps that perform an initialization of the various graphic nodes. This initialization is performed for both the master computers (open two-tiered system) and